



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,970	09/01/2000	Kyosuke Taka	55090(904)	5673
21874	7590	07/01/2005	EXAMINER	
EDWARDS & ANGELL, LLP P.O. BOX 55874 BOSTON, MA 02205			NGUYEN, MADELEINE ANH VINH	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/653,970

Applicant(s)

TAKA ET AL.

Examiner

Madeleine AV Nguyen

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) 9-11 and 18-28 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 5-8, 12, 13 and 15-17 is/are rejected.
7) ☒ Claim(s) 4, 14 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to amendment filed on April 13, 2005.

Response to Arguments

1. Applicant's arguments filed on April 13, 2005 have been fully considered but they are not persuasive.
2. Applicant remarks, "in the currently outstanding Official Action, the Examiner's rejections of the presently pending claims are made on the basis of teachings of the present invention that she admits are not specifically present in the cited Fukushima reference upon which she relies."

It is noted that in the rejection, the examiner states "Fuskushima does not directly teach ...". That does not means that Fukushima does not teach. That means that Fukushima does not clearly teach in a direct way the limitation as claimed in the claims that the examiner needs to further show the teaching in Fukushima can read on the claimed invention. For instance, Fukushima teaches two density/gradation corrections to suppress an uneven concentration by using gradation patterns.

3. Applicant argues limitations such as "a char of the gradation patterns is formed in view or an edge effect and responsively in replenishing toner, and that these factors result ... the reading of the gradation patterns." (page 13), an image forming apparatus in which, when reading the gradation pattern, correction in accordance with the degree of white of the base of the recording member having the gradation patterns thereon is carried on, ... appropriate manner." (page 14),

Art Unit: 2626

in the image forming apparatus of the present application, an arrangement is adopted that eliminates the edge effect and improves the responsiveness in replenishing the toner, ... a sub-scanning direction ..." (page 14) that are not in the claims. The specification is not the measure of the invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. In re Sporck, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968). The same with the remark that "Fukushima never take account of (i) whether or not the test pattern formed on the sheet or the photosensitive drum is in a appropriate state, ... whiteboard is appropriate." (page 16).

Therefore, the rejection of the claims is maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 3, 5-8, 12-13, 15, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima (US Patent No. 6,115,561).

Concerning claim 1, Fukushima discloses an image forming apparatus (Figs.1-2) comprising an image forming section (212, Fig.2B) for forming a pattern chart having a plurality of gradation patterns which are adjacent to each other in a sub-scanning direction of image formation (Figs.7-8); an image reading section (A, Fig.1) for reading image information from the

Art Unit: 2626

pattern chart; and an image processing section (108, Fig. 1) for adjusting an image forming condition based on the image information.

Fukushima does not directly teach that the gradation patterns are aligned thereon so as to suppress an uneven concentration appearing depending upon a scale of an electrostatic potential difference on the gradation patterns. However, Fukushima teaches in Fig. 3 the first density gradation control (S101-S104) for maximum-density correction control by appropriately setting the contrast potential from the obtained density information (S103-S104). The relative photosensitive-drum surface potential is the difference between the developing bias potential and the surface potential of the photosensitive drum after a latent image has been formed (col. 6, lines 41-61). Thus the contrast potential is used when providing the test print 1 where the difference between each of the surface potentials of photosensitive drums 121, 131, 141, 151 and the developing bias potential. Fukushima further teaches a second gradation control which is adjusted based on the result of the first density gradation control (col. 5, lines 55-63). The second density gradation control (S105-S107) is for gradation correction control by using of test print 2 (Fig. 8) so as to correct the concentration of the toner. In other words, in this control, a test pattern is formed and the concentration of the developer is controlled wherein the concentration of the developer is depend on the contrast potential. Thus, the contrast potential is equivalent to a scale of an electrostatic potential difference as claimed since it is the difference between the surface potential of photosensitive drums and the developing bias potential and the concentration correction due to uneven concentration is depended on the contrast potential. It would have been obvious to one skilled in the art at the time the invention was made to consider Fukushima teaches that the gradation patterns (test print 2 in Fig. 8) is aligned so as to suppress

Art Unit: 2626

an uneven concentration (difference concentration of the developer 44 detected from the toner-concentration sensor 677) appearing depending upon a scale of an electrostatic potential difference on the gradation patterns (a contrast potential for providing an appropriate gradation characteristic for the gradation patterns) since Fukushima teaches that the test print 2 (a pattern chart) having a plurality of gradation patterns (Fig. 8) is generated for controlling the uneven concentration of the developer as claimed (col. 6, lines 41-61; col. 8, lines 25-60; col. 9, lines 5-15; col. 10, lines 7-42; col. 12, line 66 – col. 13, line 26; col. 13, line 53 – col. 14, line 12; col. 14, line 59 – col. 15, line 15).

Concerning claims 2-3, 5-8, 13, 15, Fukushima further teaches that the plurality of the gradation patterns have concentrations arranged in a staggered configuration (Fig. 8, col. 8, lines 25-51); the gradation patterns are adjacent to each other in the sub-scanning direction are brought into contact with each other (Fig. 8; col. 8, lines 25-51); a main-scanning direction is perpendicular to the sub-scanning direction, and the gradation patterns with closest concentrations are aligned in the main scanning direction; the gradation patterns are aligned in increasing order of concentration; the image are processed with reference to a color of a base of the pattern chart and the image processing section adjusts an image forming condition based on the processed image information (Fig. 8; col. 8, lines 25-51); the reading section performs a readout reducing operation so as to obtain a base concentration (col. 10, lines 14-42).

Concerning claim 12, Fukushima discloses an image forming apparatus (Figs. 1-2) comprising an image forming means (B, Fig. 1) for forming an image on a recording member by forming an electrostatic latent image on a light sensitive element based on first image information (test print 1); image formation input means (212, Fig. 2B) for inputting second image

Art Unit: 2626

information (test print 2) obtained based on the image formed on the recording member; image processing means (108, Fig. 1) which processes the second image information and adjusts an image forming conditions when the image is a pattern chart (Fig.8) having different gradation patterns aligned thereon, wherein the gradation patterns are adjacent to each other in a sub-scanning direction of the image forming means (Fig.8; col. 8, lines 25-51).

Fukushima does not directly teach that the pattern chart is formed so as to prevent an intensified electric field caused by a potential difference at a boundary of an electrostatic latent image. However, Fukushima teaches in Fig.3 the first density gradation control (S101-S104) for maximum-density correction control by appropriately setting the contrast potential from the obtained density information (S103-S104). The relative photosensitive-drum surface potential is the difference between the developing bias potential and the surface potential of the photosensitive drum after a latent image has been formed (col. 6, lines 41-61). Thus the contrast potential is used when providing the test print 1 where the difference between each of the surface potentials of photosensitive drums 121, 131, 141, 151 and the developing bias potential. Fukushima further teaches a second gradation control which is adjusted based on the result of the first density gradation control (col. 5, lines 55-63). The second density gradation control (S105-S107) is for gradation correction control by using of test print 2 (Fig.8) so as to correct the concentration of the toner. In other words, in this control, a test pattern is formed and the concentration of the developer is controlled wherein the concentration of the developer is depend on the contrast potential. Thus, the contrast potential is equivalent to a scale of an electrostatic potential difference as claimed since it is the difference between the surface potential of photosensitive drums and the developing bias potential and the concentration correction due to

Art Unit: 2626

uneven concentration is depended on the contrast potential. In addition, Fukushima teaches “The relative photosensitive-drum surface potential is the difference between the developing bias potential and the surface potential of the photosensitive drum after a latent image has been formed...” (col. 6, line 48 – col. 7, line 8) and “a patch electrostatic latent image corresponding to the predetermined density is formed on the photosensitive drum 121...” (col. 11, line 51 – col. 12, line 24). It would have been obvious to one skilled in the art at the time the invention was made to consider Fukushima teaches that the gradation patterns (test print 2 in Fig.8) is aligned so as to suppress an uneven concentration (difference concentration of the developer 44 detected from the toner-concentration sensor 677) appearing depending upon a scale of an electrostatic potential difference on the gradation patterns of an electrostatic latent image (a contrast potential for providing an appropriate gradation characteristic for the gradation patterns) since Fukushima teaches that the test print 2 (a pattern chart) having a plurality of gradation patterns (Fig.8) is generated for controlling the uneven concentration of the developer as claimed (col. 6, lines 41-61; col. 8, lines 25-60; col. 9, lines 5-15; col. 10, lines 7-42; col. 12, line 66 – col. 13, line 26; col. 13, line 53 – col. 14, line 12; col. 14, line 59 – col. 15, line 15).

Claim 16, Fukushima discloses the image forming apparatus as discussed in claim 1 above. Fukushima does not directly teach that the image processing means adjusts an image forming condition with reference to a base color of the recording member having the pattern chart formed. However, Fukushima teaches that “controlling the concentration of the tone of the developer to a target value and correcting the target value of the toner concentration depending on the density of the reference patch image on the photosensitive drum using the second density/gradation control.” (col. 12, line 66 – col. 13, line 3). For instance, Fukushima teaches a

Art Unit: 2626

reference white plate 106 for determining a white level of the CCD sensor as a reference white (col. 3, line 56; col. 4, lines 8-9) and Figs.12-13 illustrate the reference value updating processing for the gradation control (col. 13, line 66 – col. 14, line 38). Thus, the toner concentration (image forming condition) is adjusted with reference to a base color of the recording member (Y, M, C, K) having the pattern chart. It would have been obvious to one skilled in the art at the time the invention was made to consider the toner concentration in Fukushima is the image forming condition with reference to a base color of the recording member since the image processing means adjusts the toner concentration having the pattern chart formed (Fig.8).

Concerning claim 17, Fukushima further teaches that the change in the quantity of light emitted to the pattern chart (S203-S204, Fig.11; col. 10, line 66 – col. 11, line 30).

Allowable Subject Matter

3. Claims 4, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's Statement of Reasons for Allowance: Claims 4, 14 are objected over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image forming apparatus as claimed in claims 1, 12 above wherein the image forming section forms a dummy pattern which is adjacent to the gradation pattern at an end in

Art Unit: 2626

the sub-scanning direction on the pattern chart and which is equal or close to the end gradation pattern in concentration.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

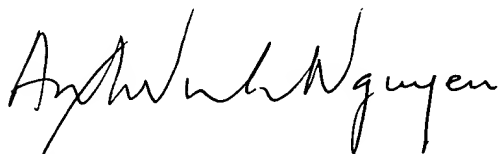
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 571 272-7466. The examiner can normally be reached on Monday, Tuesday, Thursday 9:30-6:00.

Art Unit: 2626

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Madeleine AV Nguyen
Primary Examiner
Art Unit 2626

June 24, 2005

